SABE DATA PROCESSOR

(Society for Automation in Business Education)

FOR BETTER BUSINESS EDUCATION

Volume 1, Number 4, April 1961

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AUTOMATION RESEARCH

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Byron Charles Yale, A COMPREHENSIVE STUDY OF METHODS EMPLOYED IN MACHINE ACCOUNTING. No other data about this study is available to the Editors.

WORTH READING

Services

At press time copy from Berkeley Enterprises, Inc., had not been received. In this

issue we preview the work of THE NETHERLANDS A.D.P. RESEARCH CENTER, Stadhouderskade 6, Amsterdam, Netherlands.

The Netherlands A.D.P. Research Center is a non-profit organization, founded on July 15, 1958 by the College of Economic Sciences of Amsterdam University. It is sponsored by many other academic, professional and business organizations, as well as by industrial and commercial companies within the Netherlands.

The Center aims at studying the possibilities and the limitations of automatic data processing through electronic and other integrating equipment. The knowledge thus acquired is spread among its sponsoring bodies and among students of the affiliated universities.

The Center refrains from activities which properly belong to the field of professional consultants.

It seeks to co-operate with all persons and establishments at home and abroad, whose objectives concur with the aims of the Center.

Within two years the Center has developed into a national institution which gets the full support of all interested groups. It not only holds a real interacademic position but also has the active support of the Netherlands government as well as leading financial, industrial and professional organizations.

The activities include documentation, research on applications, spreading of information and training of personnel.

Documentation and research are accomplished by the establishment of a library and an extensive documentation system including standardized objective descriptions of available and prospective automatic data processing equipment. Special attention is given to the description of applications at home and abroad. As far as possible, these descriptions are based on independent expert examination by the home staff. They include all relevant data to an appreciation of these applications.

The library now contains about 2,000 volumes, various manufacturers' manuals, subscriptions to 70 periodicals all in the field of A.D.P., and in English, French, German and Dutch, some ten reports elaborate on application studies done by the staff. All material is classified according to a special reference system, set up by the Staff, which enables one to find the publications by catchword(s), classification code, author's name or title.

The activities concerning investigations aim not only at the organizational, technical, mathematical and accounting aspects of automation, but also at its economic, psychological and sociological angles.

An Advisory Board has been formed, on which serve a great number of prominent experts in various fields of science and business, to give advice with respect to these investigations.

The information and training program covers:

1. The publication of a bi-monthly bulletin, named "Informatie", sent free of charge to the sponsoring bodies. This bulletin contains information about the activities of the Center, and news concerning recent developments and activities of the manufacturers of relevant equipment as well as articles on the philosophy of automation (in Dutch).

2. The publication of reports regarding applications of A.D.P. as examined by the Center's staff, distributed on a cost-price basis to sponsors only (either English or Dutch).

3. The publication of papers with a wider scope than those incorporated in the bulletin, available for purchase by sponsors and in some cases to others as well (either English or Dutch).

4. A set of meetings and courses of study, suitable for everybody concerned with

ADP-problems, from executives and staff down to problem-analysts, programmers and machine-operators.

Books

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Lester R. Bittel, Morley G. Melden, and Robert S. Rice, PRACTICAL AUTOMATION. McGraw-Hill, 1957.

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Harry L. Wylie, Editor, OFFICE MANAGEMENT HANDBOOK. Ronald, 1958.

Articles

Lowell A. Watkins, "Systems and Procedures, Part I," JOURNAL OF BUSINESS EDUCATION, 36:77, November 1960; Part II, 36:121, December 1960. An overall discussion of the topic that every business teacher should read. However, it does little more than introduce the reader to the area and should whet the appetite of the reader to learn more about this vital area. Business is just now beginning to recognize the importance of systems to all aspects of their operation. With the advent of data processing, the business that avoids improving its systems, is not likely to long remain competitive.

"Magnetic Ink: Common Language for Machines and Men," JOURNAL OF BUSINESS EDUCATION,

36:71, November 1960. A good introduction to a promising new data processing area. A reprint from the original article in MODERN OFFICE PROCEDURES, November 1959.

MBA Round Table Discusses, "Effects of Business Automation in the Sixties." MANAGEMENT AND BUSINESS AUTOMATION, 5:18, January 1961. The first of a two-part series. MBA's panel of experts predict a "moneyless" economy, discuss computer's role in business forecasting and challenge job displacement myths.

Joseph R. De Paris, "Thin Film." DATA PROCESSING, 3:46, March 1961. An excellent article on the use of "thin films" as computer memory. The speed of operation is such that a new word has to be used, Nanoseconds—or billionths of seconds.

Read the Editorial in the March 1961 issue of DATA PROCESSING. As Mr. Gille states it, "If your firm doesn't already have (a computer) it appears to be a dead certainty that you will have a computer within the next five years." The rest of the Editorial is equally important.

Enoch J. Haga, Positions for high school graduates in data processing, COMPUTERS AND AUTOMATION, 8:13, February 1959.

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Other References

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E. Dana Gibson, INTEGRATED AND ELECTRONIC DATA PROCESSING IN RELATION TO SCHOOLS OF BUSINESS ADMINISTRATION, Monograph C-6, South-Western Publishing Co., November 1957. (Pages 13-14, Question 5a, contains some tips that might be run down by a prospective researcher in the field of automation). This monograph is free for the asking from South-Western.

OF INTEREST TO TEACHERS

Weekly Lectures for Business Machines Classes

In this issue we continue the series contributed by Dr. E. Dana Gibson, Professor of Office Management, San Diego State College, San Diego 15, California.

4. Printing Calculator Machine-Systems Relationships

Printing calculators were developed from a systems need for a calculating machine that would also produce a tape as a by-product of the operation. The early machines were little more than ten-key adding machines with automatic division and a tape added. Today, printing calculators are developing into true systems machines, as are other office machines. The principle that "No human being should do what a machine can do better, faster, and/or more accurately" has lead to the development of printing calculators that can do these things:

1. Hold results of some operation in memory for later use in the problem; such as
   a. Hold product of a multiplication for recall as the multiplicand in the next multiplication.
   b. Hold product of a multiplication for recall as the multiplier in the next multiplication.
   c. Hold product of a multiplication for recall as the dividend in a division step to follow.
   d. Hold product of a multiplication for recall as the sub-total of a future or further addition or subtraction.
   e. Hold multiplier in memory for use as a constant for further multiplication by the same figure.
2. Hold results of various operations in a memory to which these results have

been transferred; such as,

a. Hold the total of an addition or subtraction problem for grand total purposes; i. e., in a memory to which other addition and/or subtraction totals are transferred to obtain a grand total.

It is axiomatic that "the more a machine can do of an operation the less chance there is for an error to creep in to spoil the results." In a good system, a machine should be introduced any time the error factor, the time factor, or the effort factor involved from hand or manual operation of the job is more than repaid by the saving in each or all of these three if a machine does some or all of the work.

The better printing calculators on the market are now fully automatic in character. By this is meant that they perform division and multiplication operations by depressing a key—the operator does not have to do more than set the figures in the keyboard properly. They also have easy operation where constants are involved, including using a dividend as a constant. This is accomplished by throwing a constant lever or by recalling the desired figure from memory. Again, such features only point up the "systems" construction of these machines.

Case Study

An excellent case study of printing calculators in a systems operation is Pan American's foreign mail rate conversion system. What they did with the Remington Rand Printing Calculator could probably just as easily be accomplished on several other makes of printing calculators.

PRINTING CALCULATOR HELPS CONVERT FOREIGN MAIL RATES
(SYSTEMS, Nov.-Dec. 1956, p. 30)

Pan American was in existence less than a year when the International Air Mail Conference drafted agreements which later became part of the Universal Postal Union Convention. One provision was that all billings for carrying mail were to be presented in gold francs, no matter which of the subscribing nations were involved.

This has been standard practice ever since. The Foreign Mail documents processed by our Mail Receivables Unit show how many kilos of mail were carried between given points. The Foreign Mail Rate Manual is consulted to determine the applicable gold franc rate per kilo from point-to-point, and kilo times gold franc extensions are made to determine our revenue as carrier. These figures must then be reconverted into U. S. dollars for entry to our books.

Until recently this work was performed by five clerks, each equipped with an adding machine. Two mobile calculators were also provided for their use in making computations.

The arrangement was at best unsatisfactory. If all five clerks simultaneously came to the conversion step, three had to wait until the calculators were free. As a result, there were always packets of unfinished work.

Even where a clerk could go directly from adding machine to calculator, it meant an interruption of the work flow and the use of two machines with different keyboards. This created a perfect climate for errors. A misplaced decimal slide could mean a mistake compounded along the line into a sizeable loss of revenue.

We overcame these problems by means of the 99 Printing Calculator, whose features are ideally suited to our mail receivables operation. Compact as an adding machine, the 99 does much more. Whether used for addition, subtraction, multiplication or division, positive proof of accuracy is assured through its printed Simplatape, which shows only the essential figures for each problem run.

Superfluous steps are eliminated altogether, increasing the readability of the tape for operator checks and permanent record purposes. Individual factors, such as divisors and multipliers are easily distinguishable, while sub-totals and totals are automatically printed in red.

The calculator clears itself automatically at the end of each problem, and the total or asterisk printed on the tape indicates that the machine is ready for the next problem without preliminaries of any kind.

Despite the fact that the machine clears automatically, it can retain a multiplicand indefinitely if desired. This is the basis of constant multiplication, an invaluable aid where the same number must be multiplied by different factors for separated totals. The constant figure is indexed only once on the keyboard for successive multiplication by the variables. This is important to us in the gold franc to U. S. dollar conversion.

With the Model 99, the personnel of the Mail Receivables Unit now prove the foreign mail documents by addition, extend kilos times gold francs by multiplication, and convert gold francs into U. S. dollars either by division or constant multiplication.

From the standpoint of the clerks themselves, the 99 offers the following advantages:

1. Greater accuracy and smoother work flow, since all the arithmetic is performed on one machine with step-by-step visual proof.

2. Smoother operation, owing to a responsive keyboard arranged in a $3\frac{1}{2}$" square above a single row of multiplication keys (0 through 9).

3. Automatic decimal placement, correctly pointed off up to ten places in a single operation.

Of the nine clerks in the Mail Receivables Unit, four are equipped with the Model 99. Thus, we have been able to discard the two rotary calculators and all but one of the adding machines. We have also reassigned two people to other duties and saved space in addition.

Last year, approximately nine percent of Pan America's $238 million dollar revenue was calculated by the Mail Receivables Unit. With expansion underway, we are now in a position to handle an increased load by means of a greatly simplified desk-top operation.

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Automation and the Curriculum

Fresno State College, Fresno, California, Post Session: August 14-25,

Bus. 289, Workshop in Business Education—Automation and Data Processing, 2 units, Instructor: Emerson, time and room to be announced.

Glossary of Automation Terms

Scientists and engineers are giving increasing attention to several new, non-conventional methods of electric power generation. These methods are attractive because they promise more efficient or more effective means to exploit the diminishing supply of conventional fuels at our command.

FUEL CELLS—a fuel cell converts chemical energy to electricity at theoretical efficiencies as high as 90 per cent. Essentially, the cell is a battery that consumes a fuel and an oxidant that are fed continuously into it. Low-temperature cells use expensive fuels, such as hydrogen. High-temperature cells can use oil or coal.

MHD (MAGNETOHYDRODYNAMICS)—MHD generators produce electric power by passing a hot, ionized gas through a magnetic field. The moving gas acts like the standard copper conductor which cuts the magnetic field of a conventional generator. MHD generators have the potential for large-scale power generation. A machine capable of generating 10 kilowatts has been successfully operated for periods up to four minutes.

Continued in next issue.

SABE Is YOUR Business

PRESS RELEASE - April 23, 1961

FROM: THE SOCIETY FOR AUTOMATION IN BUSINESS EDUCATION

The first meeting of The Society for Automation in Business Education (SABE) was called to order by Dr. E. Dana Gibson of San Diego State College at 7 a.m., March 27, 1961, in the Regency Room of the U. S. Grant Hotel, San Diego, California; the meeting was held in conjunction with the meeting of the California Business Education Association.

Dr. Gibson addressed the group on the purpose and progress of SABE. Gibson announced that the Society was being advised by an Advisory Board consisting of: Sister M. Alexius, Edgewood College of the Sacred Heart, Madison, Wisconsin; Edmund C. Berkeley, Editor, Computers and Automation, Newtonville, Massachusetts; Dr. Clyde Blanchard, Business Communication Lecturer and Consultant, Tulsa, Oklahoma; Dr. Eugene H. Hughes, Dean, College of Business Administration, Houston University, Houston, Texas; John K. Swearingen, National Machine Accountants Association National Education Vice President, General Electric Company, Louisville, Kentucky; and Jack Tauber, Systems Analyst, Remington Rand UNIVAC, Philadelphia, Pennsylvania.

Mr. Enoch J. Haga of Stanislaus State College, Turlock, California, Editor of the SABE DATA PROCESSOR, explained the objectives of the new publication which is exclusively devoted to keeping members informed about all aspects and implications of automation in education. Haga announced that he was being advised by an Editorial Committee consisting of R. Hunt Brown, Contributing Editor, MANAGEMENT AND BUSINESS AUTOMATION; Margaret Milligan, Managing Editor, DATA PROCESSING DIGEST; and Robert M. Smith, Editor, OFFICE MANAGEMENT. Haga also said that the Society is rapidly expanding and that copies of the SABE DATA PROCESSOR are being mailed out to nearly all states and to several foreign countries.

Dr. Gibson appointed Cecil Gummersall as SABE Representative for Northern California; William E. Earle, Western High School, Anaheim, California, as SABE Representative for Southern California; Dr. R. D. Balthaser, State Supervisor of Business Education, Columbus, Ohio, as SABE Representative for the State of Ohio; and Mr. R. Stanley Merrill, Kokomo High School, Kokomo, Indiana, as SABE Representative for the State of Indiana. Other appointments will soon follow.

DeWand Skeen appointed a Constitution Committee to study the Constitution and suggest improvements. Members are: John Emerson, Fresno State College, California; Ellen J. Skibness, Mankato State College, Mankato, Minnesota; and Dr. William R. Pasewark of Texas Technological College, Lubbock, Texas.

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Special Announcements

THE BALLOT and/or the REQUEST FOR MEMBERSHIP BLANK may be copied on another sheet of paper and mailed-in if you do not desire to spoil your issue by cutting it up.

Dr. Gibson announces that offset copies of the article by Arnold E. Keller, "Automation - The Job Maker," which appeared in the April 1961 issue of MANAGEMENT AND BUSINESS AUTOMATION, are available for 10¢ per copy to cover cost of postage. Write to: Dr. E. Dana Gibson, Professor of Office Management, San Diego State College, San Diego 15, California.

Dr. Gibson says that the second part of the article will appear in the May 1961 issue of MANAGEMENT AND BUSINESS AUTOMATION. Read the entire article and keep it in your files.

Now Is The Time

Now is the time to get in your "two cents worth" about SABE discussions of automation in your local, state, or regional Business Education, or other, meetings. Most organizations make up their Fall program calendars during the last of the Spring semester. Contact those in charge of programs and see if you or a local, state, or regional group of SABE members can't put on a program about automation (and incidentally about SABE). At these meetings, if well done, it is possible to sign up a number of new SABE members. Literature should be forthcoming to pass out at these meetings that should make it easy for you to do this.

If you have any ideas as to how such programs can be more readily set up, run, and/or members obtained, please write these to Dr. E. Dana Gibson, SABE President, San Diego State College, San Diego 15, California.

Looking Ahead

Early this fall, one of the issues of the SABE DATA PROCESSOR will contain part of the details about the One Week and the Two Week Automation Workshops conducted at Gunnison and San Diego State. In subsequent issues the entire details of how these workshops were conducted, including all needed detail, will be set forth. In this way, persons or groups wanting to conduct their own workshops or seminars will find many of the details and suggestions that will help them do so. These will be the most comprehensive, it is believed, that have ever been devised. Detail about how to contact, and who to contact, will be given as well as audio-visual aids that can be used, and how they were used. The usual bibliographies and overall time scheduling will be shown.

This first year we have been able to get out an issue of the SABE DATA PROCESSOR each month on an irregular schedule. We felt it was better to start and make a few mistakes than to do nothing. The next issue will be the May issue, and that will be the last until the new academic year. Beginning with the October issue, eight issues will come to all members. We may be able, at some future date, to have 12 issues per year. As soon as it is feasible and financially possible, the SABE DATA PROCESSOR will be offset or printed. Suggestions from our high-powered Editorial Committee (see our masthead) should help improve our journal a great deal more. Some method of financing is being discussed, so that more professional help may be used on a full-time basis. If membership becomes sufficiently large, this may reduce the need for such outside assistance—although few magazines have been able to do away with this aspect of production.

During the 1961-62 school year, it is hoped that a National Membership Chairman and a National Organizing Chairman can be appointed and that State Membership Chairmen can be appointed for all the states at the very least. Methods of promoting automation by associating and/or cooperating with other groups are being actively explored; it is essential, however, that SABE preserve its autonomy. SABE was created for and exists to serve a purpose and that purpose cannot be compromised.

It is requested that members in the various states that know of persons who are members that would make good local, state, or regional membership chairmen, or who have suggestions to make for any of the proposed or present activities of the organization, at any level, send them to Dr. Gibson as soon as possible. A number of members have already been doing this and it has been a source of many good ideas and many prospective members.

Expansion?

Several times lately the suggestion has come in that SABE be expanded to cover other interested teaching areas. One of these that seems to have merit is the suggestion that an organization called SAE be formed, under which all groups could be included. SAE would stand for Society for Automation in Education. There is at least one strike against this name--many groups don't like to be associated with a strictly educational association which is thought of primarily as a professional education organization. A substitute might be SATE for Society for Automation in Teacher Education, which again has bad connotations for some people and does not really indicate the purpose and objectives of the Society. A possible name might be STA, for Society for Teaching Automation, with the subheads kept in a form similar to SABE for Society for Automation in Business Education, or SAME for Society for Automation in Mathematics Education, etc.

Whatever the name turns out to be, it would seem that SABE should lead the way toward such a move. Non-business people are already asking how they can join, and we don't think we should turn them away. Let's get some views from our readers. The better ideas will be included in a "Letters to the Editor" column of some type. This kind of forum for the interchange of ideas is planned for next year's issues of the SABE DATA PROCESSOR.

Meetings Worth Attending

May 7-10--NOMA 42nd International Conference, Sheraton-Jefferson Hotel, St. Louis, Mo.

ELECTRONIC FARM ACCOUNTING

by Arthur H. Pike, Assistant Professor of Business Administration, Norwich University, Northfield, Vermont

Electronics has now moved into farming in Vermont. A new program, begun this year by the Vermont Extension Service and the University of Vermont, assists a group of volunteer Vermont farmers in their record-keeping chores. Up-to-date farm business records can be obtained by participating farmers through a mail-in system of reporting expenses and receipts.

The farmer jots down each item of income and expense as it occurs, and codes each item. Once a month he sends these records to the University, where they are checked and punched into cards. The cards, processed electronically, provide in return a monthly financial summary, pointing up the strong and weak points of the farmer's operation, and aiding him in making management decisions. The cost per year to the farmer is $45.

The code list supplied to participating farmers consists of a three-number code, devised so as to include nearly all generally-found types of farm income or expense, as well as codes for capital transactions. For example, the sale of apples is coded as "180, while maple syrup sales are coded "354". In addition, the farmer reports the quantity he has sold, and the amount of money he receives. Expenses and capital transactions are handled similarly.

For farmers employing paid workers, payroll data is also accumulated, and social security and income tax withholding subtotals are provided. Farmers may also elect to include information about cash family living expenses.

During the first few months of operation, only farmers living in two Vermont counties are eligible, though all orchardists and poultrymen in Vermont may participate.

REQUEST FOR MEMBERSHIP BLANK

Name_____ Title_____

Address_____

Firm or School_____

PROPOSED MEMBERS

I hereby propose the following person for membership (attach another sheet if necessary).

Name_____ Title_____

Address_____

Firm or School_____

May ____ May Not ____
Use my name in contacting person

Proposed by _____

MAIL TO DR. E. DANA GIBSON, PROFESSOR OF OFFICE MANAGEMENT, SAN DIEGO STATE COLLEGE, SAN DIEGO 15, CALIFORNIA.

REQUEST FOR MEMBERSHIP BLANK

Name_____ Title_____

Address_____

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PROPOSED MEMBERS

I hereby propose the following person for membership (attach another sheet if necessary).

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Proposed by _____

MAIL TO DR. E. DANA GIBSON, PROFESSOR OF OFFICE MANAGEMENT, SAN DIEGO STATE COLLEGE, SAN DIEGO 15, CALIFORNIA.

A/O 2-16-61

Continued from bottom of page 10

Depending upon the success of the first year, the program may be expanded in the future.

Automated Teaching

Conducted by David J. Waterman, Jr., Instructor in Psychology, Modesto Junior College, Modesto, California

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SPECIAL NOTICE: Copies of the Treasurer's Report are available from Mr. Haga (address on masthead on front page) to members only—write to Mr. Haga for a copy!